



Colorado Energy Office FY 2015-16 Annual Performance Evaluation (October 2016)

Strategic Policy Initiatives: The Colorado Energy Office (CEO) identified several strategic policy initiatives for FY 2015-16 and beyond. For this performance evaluation, the Department has updated progress on the initiatives identified in the FY 2017 Performance Plan that capture the Department's strategic and operational priorities, and reflect the overall direction as identified by Department leadership. The updates reflect data as of October 1, 2016. Additional detail for these and other strategic policy initiatives is available in the Department's Performance Plan, which may be accessed [here](#).

Transportation Sector: Alternative-Fuel Vehicles

SPI 1: Increase the sales of compressed natural gas (CNG) fuel by 500% from 2.5 million gasoline gallon equivalents (GGEs) per year in 2013 to 13 million GGEs per year by June 30, 2018, and increase the electric vehicle (EV) market share for new light duty vehicles sold in Colorado from 0.62% in 2013 to 3% by June 30, 2020, diversifying transportation fuel use for all Coloradans.

CNG: CNG fuel sales in Colorado increased from 2,583,243 GGEs to 5,648,589 GGEs in 2014, and declined slightly to 5,627,307 GGEs in 2015. This was due in part to the market response to lower gasoline prices. The Colorado Department of Revenue has a three-month delay in releasing excise tax data. During January through June 2016, 3,961,606 GGEs were sold in Colorado. (Data source: DOR)

EV: As of April 2016, Colorado had 6,678 EVs in the state, increasing light duty vehicles sold in Colorado from 0.62% in 2013 to 1% in April 2016. CEO will report total 2016 EV numbers in March 2017. (Data source: DOR and Polk)

CEO's strategy to remove market barriers to alternative fuel adoption is to increase the number of publicly accessible alternative fueling stations along Colorado's major transportation corridors. This will reduce Coloradans' concerns about the driving distance from one station to another and increase the likelihood of alternative fuel vehicle purchases. Through two grant programs, Colorado is incentivizing the market with infrastructure grants. With specified federal and state dollars, CEO is making awards to install new CNG and EV stations and monitoring and evaluating progress through the state's contract standards. The ALT Fuels Colorado grant program awarded four stations, falling five under the goal of nine. Due to low gas and diesel market prices, the program experienced more caution with CNG infrastructure investment. CEO is continuing to monitor the market and making modifications noted at the end of this report. The Charge Ahead Colorado program exceeded its annual goal and awarded 18 more electric vehicle stations for a total of 53 stations for the fiscal year. Awards were based on available federal funds and demand for stations.

Buildings/Facilities Sector: Energy Efficiency and On-Site Clean Generation

SPI 2: Increase energy savings resulting from CEO's direct energy efficiency projects by 14.6% from 151,265 MMBtu in FY16 to at least 173,378 MMBtu by June 30, 2018. **Note:** CEO has modified its original SPI 2 goal (i.e. by 12.6% from 273,253 MMBtu in FY16 to at least 307,878 MMBtu by June 30, 2018) for FY17 based on further analysis of the underlying assumptions used to establish the EPC baseline, concerning number and types of projects. The original projection included a period of stimulus funding from the American Recovery and Reinvestment Act that is not reflective of current program potential.



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CEO's direct energy efficiency projects include the following programs: 1) agricultural energy efficiency; 2) Energy Savings for Schools; 3) energy performance contracting for public buildings; and 4) weatherization assistance. Progress data is captured on an annual basis.

In FY 2016, CEO launched the Colorado Agricultural Energy Efficiency and Energy Savings for Schools Programs. These programs provide energy audits and technical assistance to producers and schools located in rural Colorado. Part of technical support includes connecting participants to various funding sources. The lag time between audits, access to financial support, and implementation took longer than anticipated resulting in fewer completed projects. The annual FY2016 savings from these programs was 1,579 MMBTus. CEO's Energy Performance Contracting Program saw six groups execute energy performance contracts, resulting in 90,104 MMBTu savings, lower than the projected estimates. CEO has modified its long-term goal based on average number of executed projects per year as well as scopes of projects. CEO's Weatherization Assistance Program achieved its annual goal of 41,919 MMBTU in savings. In total, direct savings from CEO's energy efficiency programs was 133,602 MMBTus for FY 2016. (Data source: CEO contractor attested energy audits)

SPI 3: Decrease Colorado's average annual residential energy use by 5% from 91 MMBTU in 2012 to 86 MMBTU by June 30, 2018.

According to data from the U.S. Energy Information Administration, Colorado's average annual residential energy use was 91 MMBtu in 2012, increased to 102 MMBtu in 2013, and fell to 99 MMBtu in 2014. CEO is assessing the factors that drove the increase and decrease. Specifically, CEO is looking at normalizing energy use (e.g., correcting for weather variations), and assessing if Denver's housing shortage (due to the large population influx) likely increased per household consumption. CEO will continue to assess this SPI metric and may identify changes that better reflect CEO's ability to impact energy use in Colorado's residential sector. There is an 18-month lag in data. Progress data is captured on an annual basis. (Data Source: EIA with Colorado Census)

CEO's strategies to reduce energy use in the residential sector include integrating home rating systems into the home building process as well as the buying and selling process, making it easier for consumers and realtors to compare and understand energy efficiency features. There were 8,832 Home Energy Rating System Index (HERS) ratings on new homes for the year, slightly below the annual goal of 9,000. The number of HERS scores continued to climb in the fourth quarter of FY 2016, with the highest number of HERS scores to date (2,551) suggesting a continued upward trajectory. Colorado launched the Department of Energy's Home Energy Score (HES) in Colorado specifically for the existing home market. CEO's work plan included building the infrastructure to capture and report on scores, training and certifying HES assessors, and building market awareness. Technical challenges with the software platform created obstacles that resulted in 851 scores, below the annual goal of 2,000. CEO reached its goal and trained six additional builders in its targeted market on the value of building energy efficient homes. CEO focused on the Colorado Springs market because it is the second largest real estate market in Colorado with a disproportionately low number of new homes with industry standard energy efficient ratings, compared to the rest of Colorado.



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SPI 4: Reduce the amount of household income expended by low-income households on energy from a baseline reduction in 2013 of 1.0%, on average, to a reduction of 1.5% by June 30, 2018.

In partnership with the Colorado Department of Human Services and the U.S. Department of Energy, CEO contracts with local agencies to provide economically disadvantaged residents access to cost-effective improvements that will reduce their energy usage and improve the comfort of their homes. CEO's annual energy savings for low-income household in its weatherization assistance program is 41,919 MMBTus. (Data Source: CEO contractor attested energy audits)

To achieve these goals, CEO is contracting with external vendors and agencies to perform energy audits, ratings, trainings, retrofits, and quality assurance. CEO is monitoring and evaluating progress through the state's contract standards. CEO installed weatherization measures in 2,969 low-income homes, above the annual goal. The multi-family units are estimated at the beginning of the year and are not incorporated into the annual goal. The associated installed measures saved clients a combined \$600,000 on their energy bills, over 371,000 therms of natural gas, and more than 1.9 million kilo-watt hours of electricity. These savings are realized through site specific auditing and the installation of home air sealing, insulation and appliance replacement. These improvements create long-term savings and noticeable home and lifestyle improvement for the program's clients.

Innovative Energy Production: Commercialization and Market Transformation of Emerging Energy Technologies

SPI 5: Increase generation from emerging clean technologies by 100% from 130,000 MWh in 2013 to 260,000 MWh by June 30, 2018, diversifying electricity generation for all Coloradans.

In 2013, electricity from emerging energy technologies totaled 135,377 MWh, which increased by 45% to 196,318 MWh in 2014, and modestly increased to 199,580 MWh in 2015. Small generators report to the U.S. Energy Information Administration (EIA) on an annual basis, and EIA has a 10-month delay in releasing generation data from small generators. (Data Source: EIA)

Market assessments represent a means to commercialization and market transformation goals. To investigate the opportunities that may increase generation from energy clean technologies, market assessments are being designed and executed by working closely with key stakeholders to assure that the analysis is properly targeted and of greatest value to investors and other market movers. CEO met all of its annual goals for the year.



Operational Measures

SPI 1: Alternative Fuel Vehicles - Diversifying transportation fuel use for all Coloradans

Major Program Area – Programs and Initiatives
 Process – Grant Funding Rounds and Contract Execution

Measure	FY13 Actual	FY14 Actual	FY15 Actual	Q1 FY16	Q2 FY16	Q3 FY16	Q4FY16	FY16 Total	1-Year Goal	*3-Year Goal
Publicly accessible compressed natural gas fueling stations awarded	N/A	N/A	11	4	-1	1	0	4	9	5
Number of funding rounds through RFAs	N/A	N/A	2	1	0	1	0	2	2	2
Percent of contracts issued within 30 days after awarded	N/A	N/A	100%	100%	N/A	N/A	0	75%	100%	100%
Electric vehicle charging stations awarded outside of Denver Metro	13	21	50	20	23	-3	13	53 goal exceeded	35	20
Number funding rounds through RFAs	1	3	3	1	1	1	0	3	3	3
Percent of purchase orders issued within 30 days after awarded	N/A	N/A	100%	100%	82%	N/A	100%	92%	100%	100%

*Note: The 3-year goal is a projected annual goal, not a cumulative goal.



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SPI 2: Energy Efficiency and On-Site Clean Generation – Energy Savings resulting from CEO’s direct energy efficiency projects

Major Program Area – Programs and Initiatives
Process – Energy audits and presentation and MOU execution

Measure	FY13 Actual	FY14 Actual	FY15 Actual	Q1 FY16	Q2 FY16	Q3 FY16	Q4 FY16	FY16 Total	1-Year Goal	*3-Year Goal
Energy audits performed for Colorado producers	N/A	12	N/A	2	17	17	28	64	80	60
Percent of applications reviewed	N/A	N/A	N/A	100%	100%	100%	100%	100%	100%	100%
Percent of audits monitored for quality assurance (minimum of 40%)	N/A	N/A	N/A	100%	100%	0	26%	50%	40%	40%
Introductory EPC presentations and MOUs	N/A	N/A	19/9	2/1	4/3	5/1	6/2	17/7	20/10	24/12
Number of preliminary interactions before presentations/MOUs	N/A	N/A	38	5	9	4	11	29	40	48
Introductory ESS presentations and MOUs	N/A	N/A	24/4	6/0	5/2	20/18	0/0	31/21 Goal exceeded	24/12	24/12
Number of preliminary interactions before presentations/MOUs	N/A	N/A	48	12	15	14	15	46	48	48

***Note: The 3-year goal is a projected annual goal, not a cumulative goal.**

The Colorado Agricultural Energy Efficiency Program completed 64 audits and renewable energy assessments for producers. The program fell short of its goal to complete 80 audits for the fiscal year. Both the Energy Performance Contracting and Energy Savings for Schools programs use outreach and presentations to establish agreements (Memorandums of Understanding - MOUs) with districts and jurisdictions. Sometimes MOUs are executed without conducting presentations though a presentation is often the first step in securing an MOU. A signed MOU is a key indicator that an energy audit will take place and energy



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efficiency improvements will be implemented. A signed MOU also provides access to CEO’s technical support services. (Energy/MMBTu savings). The EPC Program secured seven MOUs in the final quarter but fell short to meet the annual goal. The Energy Savings for Schools program exceeded the annual goal by delivering 31 presentations and executing 21 MOUs.

SPI 3: Energy Efficiency and On-Site Clean Generation – Residential Energy Use
Major Program Area – Programs and Initiatives
Process – Training and recruitment

Measure	FY13 Actual	FY14 Actual	FY15 Actual	Q1 FY16	Q2 FY16	Q3 FY16	Q4 FY16	FY16 Total	1-Year Goal	*3-Year Goal
Home Energy Scores completed	N/A	N/A	N/A	27	231	390	203	851	2,000	10,000
Number of real estate stakeholders that successfully completed training	579	1063	1242	26	61	879	947	1913	1470	1,500
Number of qualified assessors recruited	N/A	N/A	N/A	23	7	38	21	59	85	250
Colorado Springs builders participating in a CEO-sponsored technical assistance or building science program	N/A	N/A	N/A	5	1	N/A	N/A	6	6	15
Number of inquiries through Colorado Springs Utility partnership	N/A	N/A	N/A	0	11	N/A	N/A	11	10	20
New homes sold with a Home Energy Rating System Index rating	N/A	6,784	8,385	1990	2346	1945	2551	8,832	9,000	12,000
Number of Energy Code trainings	N/A	21	30	0	1	29	24	54	50	50



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Number of builder sales trainings	N/A	21	37	2	11	6	7	26	48	30
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***Note: The 3-year goal is a projected annual goal, not a cumulative goal.**

Up until FY 2016, the real estate stakeholder trainings focused on the Home Energy Rating System Index and the new home market. Due to several market barriers, Colorado found a better tool to address the existing home market. In September of FY16, Colorado launched the Department of Energy’s Home Energy Score specifically for the existing home market. CEO’s work plan included building the infrastructure, training and certifying HES assessors, and building market awareness. Challenges in each area resulted in fewer HES scores than projected; however, programmatic improvements are already in place for FY 2017. The numbers of HERS scores was slightly under the goal. In other areas, builder training and energy code training, CEO met or exceeded its goal.

SPI 4: Energy Efficiency and On-Site Clean Generation – Low-Income Energy Burden

Major Program Area – Weatherization Assistance Program

Process – Inspection of sub-grantee closed housing units

Measure	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Actual	Q1 FY16	Q2 FY16	Q3 FY16	Q4 FY16	FY16 Total	1-Year Goal	*3-Year Goal
Energy efficiency measures performed on low-income eligible homes	7,087	4,137	2,925	3,050	377	504	*733	1,355	2,969 Goal Exceeded	2,600	2,600
Percent of home retrofits meeting or exceeding performance standards for weatherization	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

***Note: The 3-year goal is a projected annual goal, not a cumulative goal.**

*This number reflects an updated Q3 number that includes March units.

The weatherization assistance program inspects 5% of Colorado weatherized homes (app. 2,600) for quality assurance. The program’s numbers are reported a month after installations. The number of completed units are reported the 15th of the following month.



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CEO installed weatherization measures in 2,969 low-income homes, 369 units above the annual goal. The multi-family segment accounted for an additional 463 units.

SPI 5: Innovative Energy Production - Emerging Energy Technologies
Major Program Area – Policy and Research
Process - Market assessments to analyze opportunities and barriers

Measure	FY13 Actual	FY14 Actual	FY15 Actual	Q1 FY16	Q2 FY16	Q3 FY16	Q4 FY16	1-Year Goal	*3-Year Goal
Micro-hydro assessment for municipal water districts and pilot project	N/A	N/A	N/A	0	0	0	1 Goal met	1	N/A
Number of water districts contacted	N/A	N/A	N/A	13	0	0	2 Goal met	15	N/A
Two studies to assess the market potential/ market barriers for emerging clean technologies	N/A	N/A	N/A	1 goal met	N/A	N/A	N/A	1	1
Number of meetings with emerging technology stakeholders	N/A	N/A	N/A	5	N/A	N/A	N/A	5	5
Geothermal resource assessment and feasibility study for Rico, Colorado	N/A	N/A	N/A	0	0	0	1 Goal met	1	N/A
Number of Rico geothermal stakeholders contacted	N/A	N/A	N/A	8	1	1	1 Goal met	10	N/A
Clear Creek County assistance in accessing technical and financial resources for a geothermal project	N/A	N/A	N/A	0	0	0	1 Goal met	1	N/A
Number of Clear Creek geothermal stakeholders contacted	N/A	N/A	N/A	7	1	3	1 Goal met	10	N/A

*Note: The 3-year goal is a projected annual goal, not an accumulative goal.



CEO's Policy and Research area conducts market assessments to determine opportunities and barriers for emerging energy technology. These project assessments are prioritized each year based on the need for more information related to a promising emerging technology in Colorado. After assessments are complete, the office works with targeted stakeholders to gather feedback on project aspects that could be improved for future market assessments.

FY2016-17 Performance Plan

FY 2017 Strategic Policy Initiatives

The Colorado Energy Office made two modifications to its Strategic Policy Initiatives: SPI 2 and SPI 5.

SPI 2 focuses on increased energy savings with CEO's direct energy efficiency projects including the following programs 1) agricultural energy efficiency; 2) Energy Savings for Schools; 3) energy performance contracting for public buildings; and 4) weatherization assistance. The original goal stated that CEO would increase energy savings by 12.6% from 273,253 MMBtu in FY16 to at least 307,878 MMBtu by June 30, 2018. Based on further analysis of the underlying assumptions used to establish the Energy Performance Contracting baseline (concerning number and types of projects), CEO changed the overall goal to the following: Increase energy savings resulting from CEO's direct energy efficiency projects by 14.6% from 151,265 MMBtu in FY16 to at least 173,378 MMBtu by June 30, 2018. The original EPC projection included a period of stimulus funding from the American Recovery and Reinvestment Act that is not reflective of current program potential.

SPI 5 focuses on increased generation from emerging clean technologies. The original goal did not identify a specific customer. The goal was revised to address clean technology developers. Additionally, CEO added small hydropower to this goal, an important part of Colorado's renewable electric generation portfolio and an area where CEO can feasibly aid in market development. To reflect an increase in hydropower capacity along with a relevant baseline year and appropriate unit of measure, a specific goal was added: Assist clean technology developers to increase annual generation of emerging technologies by 100% from 130,000 MWh in 2013 to 260,000 MWh by 2018, and to increase the capacity of hydropower by 16% from 209 MW in 2010 to 242 MW by 2018.



FY 2017 Strategies and Operational Measures

The Colorado Energy Office made several modifications related to its strategies and operational measures.

CEO made two specific changes to its strategic approach with CNG fueling station infrastructure related to the ALT Fuels Colorado program. 1) CEO changed its grant funding schedule from semi-annual to a rolling grant period to give developers more flexibility in making grant proposals; and 2) CEO staff is working more directly with prospective developers in targeted areas to complete CNG fueling station infrastructure on Colorado's major corridors. CEO added an operational measure of CNG gasoline gallon equivalents committed by fleet owners in awarded proposals. This will help CEO evaluate the effectiveness of Refuel Colorado fleet coaches in their effort to drive interest in compressed natural gas by fleet owners. Due to the continued low gas and diesel price in the market, the program has seen significant caution with CNG infrastructure investment. CEO is continuing to evaluate the market conditions and may make additional adjustments to its program.

An operational measure was added to the Charge Ahead Colorado (CAC) program's annual goal regarding EV (Electric Vehicle) Wired Workplace events. These publicized events can influence the market and have an impact on the number of CAC grant program submissions.

CEO added an operational measure to the Colorado Agricultural Energy Efficiency program's annual goal regarding financial contributions leveraged through CEO's Regional Conservation Partnership Program partners. The amount of contributions impacts the number of energy efficiency that producers can implement.

CEO modified its operational measures for the Energy Performance Contracting and Energy Savings for Schools programs' annual goals. CEO is continuing to implement presentations as an outreach strategy in obtaining a secured agreement or memorandum of understanding (MOU); however, it is not considered a lead goal. A signed MOU is a key indicator that an energy audit will take place and energy efficiency improvements will be implemented.

CEO modified its strategy and annual goal for new homes/codes for FY 2017 to better reflect its impact on the market. CEO has identified two regions - Colorado Springs/El Paso County and Grand Junction/Mesa County - to focus its efforts due to the volume of new construction compared to a low Home Energy Ratings System Index (HERS) penetration. This rating tool measures a home's energy efficiency, similar to a miles-per-gallon rating for new vehicles. The training operational measure has been modified to include the range of training currently administered through CEO.